

CLAIMS

1. A reciprocating compressor comprising:
 - a reciprocating motor disposed in a casing, and generating a driving
5 force;
 - a compression unit for sucking, compressing, and discharging gas by
the driving force of the reciprocating motor;
 - a resonant spring unit for providing a reciprocating movement of the
reciprocating motor with a resonant movement; and
10 at least two spring supporting frames by which the resonant spring
unit is supported, wherein one of the spring supporting frames is inserted into
another spring supporting frame for being coupled with each other.
2. The compressor of claim 1, wherein the spring supporting
15 frames are coupled with each other by welding.
3. The compressor of claim 1, wherein the spring supporting
frames comprises:
 - a first frame for supporting a first spring of the resonant spring unit,
20 which is shrunk in compression operation of a piston of the compression unit,
together with a spring seat panel connected with the piston; and
 - a second frame for supporting a second spring of the resonant spring
unit, which is shrunk in suction operation of the piston, together with the
spring seat panel.

4. The compressor of claim 3, wherein the first frame comprises a disc shaped first spring supporting portion on which the first spring is supported, and a first cylindrical portion extended from an outer
5 circumference of the first spring supporting portion toward the second frame; and

the second frame comprises a disc shaped second spring supporting portion on which the second spring is supported, and a second cylindrical portion extended from an outer circumference of the second spring
10 supporting portion toward the first frame, and inserted at an inner circumferential surface of the first cylindrical portion of the first frame.

5. The compressor of claim 4, wherein an end of the first cylindrical portion and an outer circumferential surface of the second
15 cylindrical portion are engaged by welding.

6. The compressor of claim 3, wherein the first frame comprises a disc shaped first spring supporting portion by which the first spring is supported, and a first cylindrical portion extended from an outer
20 circumference of the first spring supporting portion toward the second frame; and

the second frame comprises a disc shaped second spring supporting portion by which the second spring is supported, and a second cylindrical portion extended from an outer circumference of the second spring

supporting portion toward the first frame, wherein the first cylindrical portion is inserted into an inside of the second cylindrical portion.

7. The compressor of claim 6, wherein an end of the second
5 cylindrical portion and an outer circumferential surface of the first cylindrical portion are engaged by welding.